

**LAND ENCROACHMENT AND COMMUNITY DEPENDENCE ON THE
FOREST IN BOKOR NATIONAL PARK: UNDERSTANDING THE ISSUES**



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EEPSEA was established in May 1993 to support research and training in environmental and resource economics. Its objective is to enhance local capacity to undertake the economic analysis of environmental problems and policies. It uses a networking approach, involving courses, meetings, technical support, access to literature, and opportunities for comparative research. Member countries are Thailand, Malaysia, Indonesia, the Philippines, Vietnam, Cambodia, Lao PDR, China, and Papua New Guinea.

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1. Introduction

Natural systems and resources in Bokor National Park have continued to degrade as a result of the various pressures of development. The underlying reason for this decline is that protected areas in the locality are not regarded as development assets; they fall outside local and national economic planning. They fail to receive appropriate levels of investment to maintain the benefits they provide.

For many impoverished Cambodians, the national parks and protected areas of the country are seen as convenient sources of free wood, food and land. The park has come under increasing pressure from landless migrants who have moved to the area in recent years and become involved in many of the logging, encroachment and poaching incidents in and around the protected areas.

Preah Monivong “Bokor” National Park, established by royal decree in 1993 (Royal Government of Cambodia 1993), is one of 23 protected areas in Cambodia. With an area of 1,400 km² spanning four southern provinces (Kampot, Kompong Speu, Koh Kong, and Sihanoukville) in the Cardamom Mountain Range, it contains a unique range of habitats and supports a rich diversity of flora and fauna (Arceo and Cheung 2005). It is estimated that 97 percent of the land use within the park is natural or semi-natural,¹ and 3 percent is transformed (IUCN 1997).² It contains a wide range of habitats, including both low- and medium-altitude vegetation and numerous waterfalls. The park provides a habitat for a number of internationally endangered species (nine species) (Kampot Provincial Office of Tourism 2006), including tigers, leopards, Asian elephants, gaur, sun bears, pileated gibbons, and hornbills, as well as a wide range of fauna of conservation significance, including peafowl and a number of other hornbill species.

Bokor generates a wide range of benefits to the surrounding areas and contributes to provincial economies. The national park turns over significant revenues to the government, enables private sector profit, sustains rural and urban household livelihoods, and is an important component of provincial economic output and growth.

The degradation of Bokor National Park (BNP) has far-reaching economic consequences, affecting many different economic sectors and groups of people. The loss of protected area (PA) goods and services is a price that the government of Cambodia, provincial economies, and local populations cannot afford to allow (Lacerda et al 2004).

If economic threats to PAs are to be overcome, there is an urgent need to understand where the threats are coming from, their nature, their influence on the protected area’s integrity, and how they can be minimised.

BNP was selected for this research because of its conservation significance, accessibility, and high level of development pressure and illegal activities.

This research looked closely at the extent to which factors of poverty, law enforcement, migration, and land prices influence land encroachment in the protected area. Understanding the role of each and their relative roles in the problem is expected to

¹ Based on data in this research, this is 96.2 percent.

² Based on this research, this is 4.8 percent.

provide policymakers with important information to help them decide how to proceed effectively with the management of BNP. Therefore, the main intent of this research is to help the government make decisions on how to improve BNP management and identify possible mechanisms to prevent land encroachment in the park.

Beyond this research, there is little evidence on the extent and nature of such activities in the PA. Of the problems, land clearing for agricultural cultivation is a major issue. The amount of land encroachment has been increasing in the past few years and represents a serious concern regarding conservation in BNP (Yuthearid 2005).

1.1 Research Objectives

The overall objective of this research is to understand land encroachment issues and local community dependency on the Bokor National Park's natural resources in order to determine possible policy options to improve park management, particularly along the lines of discontinuing land encroachment in BNP.

To achieve this goal, the study had several objectives, as follows:

- To analyse why the Ministry of Environment or park rangers cannot control land encroachment by:
 - Studying the potential and level of land encroachment in the park
 - Searching for available resources for park management, including financial support from both national and international organizations.
 - Studying and determining the core problems of land encroachment
- To analyse social and political issues that affect park management
- To investigate how the local community is involved in land encroachment, which leads to unsustainable use of natural resources in the park by:
 - Identifying dependency factors of the community on natural resources
 - Studying and analysing the ways and reasons for local community involvement in land encroachment
 - Exploring alternative measures for preventing land encroachment through community involvement
- To explore policy recommendations and to determine possible recommendations for effective BNP management and decreasing land encroachment activities within the park. The policies were to be generated from focus group discussions (FGDs) with relevant stakeholders and could include:
 - Poverty reduction policy
 - PA regulation and legislation
 - Land use management policy
 - Property rights policy
 - Pricing policy
- To identify areas for further research in order to assess the range of options for park conservation
- To determine the financing requirement for an effective BNP management

1.2 Research Methodology

The study used both primary and secondary data; data gathering had two phases. Phase 1 focused mostly on secondary data collection and collation from available sources and relevant institutions, with some primary data collection from key informant interviews (KIIs) and surveys. Data from literature and desk reviews were used to assist the development of the research design and methodology, and provided important additional information for the study. A total of 200 people and 20 chiefs in 17 communes surrounding BNP were selected for the interview, survey, and discussions. The interviewees were selected from villagers who are the most dependent and direct users of the natural resources from BNP. Selected also to participate in the discussion were village elders or knowledgeable chiefs involved in land management and BNP conservation.

Phase 2 used a participatory approach in obtaining primary data using KIIs, household surveys, and FGDs. A survey and structured questionnaire were designed for use with the selected target groups, including park management, park rangers, local authorities, commune chiefs, and local people who depend on or are involved with natural resources or land encroachment in BNP.

1.3 Sample Design

In Phase 1, all relevant information and data were collected and collated, including Cambodia's Constitution of 1993, national and sector policies, laws, royal decrees, sub-decrees, action plans, declarations (*prakas*), guidelines and reports (Table 1). Moreover, data available on land encroachment, geography, communes surrounding BNP, and populations were collected and reviewed in this phase.





Figure 1. Teamwork Activities in the Second Phase of Data Collection

Table 1: Legal Documents related to PA management

Legislation	Description
Constitution	<p>In the Constitution of 1993, two articles refer to state land and natural resource protection and management.</p> <ul style="list-style-type: none"> ○ Article 58: State property notably comprises land, mineral resources, mountains, sea, underwater, continental shelf, coastline, airspace, islands, rivers, canals, streams, lakes, forests, natural resources, economic and cultural centres, bases for national defence and other facilities determined as State property. ○ Article 59: The State shall protect the environment and balance of abundant natural resources and establish a precise plan of management.
National Policies	The Rectangular Strategy of the Royal Government of Cambodia
	Political Platform of the Royal Government of Cambodia
	Millennium Development Goals of Cambodia
	The Royal Government of Cambodia's Second Five-year Socio-economic Development Plan
	Royal Government of Cambodia's National Poverty Reduction Strategy
Sector Policy	Forestry Policy
	Land Policy
	Strategic Framework for Decentralization and Deconcentration Reform
	Law on Environmental Protection and Natural Resources Management (1996)

Legislation	Description
Law	Land Law (2001)
	Forestry Law (2002)
	Fishery Law (2006)
	Protected Areas Law (2007)
Royal Decree	Royal Decree on Protected Areas Management (1993)
	Royal Decree on Watershed Management (1999)
Sub Decree	Sub-decree on the Organisation and Functioning of the Ministry of Agriculture, Forestry and Fisheries (MAFF)
	Sub-decree on Organisation and Functioning of the Ministry of Land Management, Urban Planning and Construction (MLMUPC)
	Sub-decree on Community Forestry Management
	Sub-decree on Social Land Concessions
	Sub-decree on Sporadic Land Registration
	Sub-decree on Procedures to Establish the Cadastral Index Map and Land Register
Action Plan	National Biodiversity Strategy and Action Plan (NBSAP)
	Ten-year Strategic and Action Plan of the Ministry of Environment
Declaration (Prakas)	Prakas on Measurement to Eliminate Anarchy in Land Encroachment (RGC-1999)
	Prakas on Measurement to Manage and Eliminate Anarchy in Forestry Sector (RGC-1999)
	Prakas on Establishment of National Consultation for Protected Areas Management (RGC-2000)
	Prakas on Establishment of Mechanism for Monitoring Illegal Deforestation and Eliminating Anarchy in Forestry Sector and Protected Areas (MoE-1999)
	Prakas on Jurisdiction of Park Director (MoE-1996)
	Inter-Ministerial Prakas on Determination of Competence of the Court and Cadastral Commission regarding Land Disputes
Guideline	Guideline on Role and Responsibility of Protected Areas Officers (MoE-1995)
	Guideline on Land Use Planning
	Annual Report on Achievements of Department of Nature

Legislation	Description
Report	Conservation and Protection (MoE) in 2005 and Work Plan for 2006
	Annual Report on Achievements of Department of Nature Conservation and Protection (MoE) in 2006 and Work Plan for 2007
	Bokor National Park Report on Prevention and Controlling of Illegal Activities in the Park
	Monthly Report on Land Encroachment within the Park and Work Activities Report
	Report from Kampot District on Land Property

In Phase 2, five commune chiefs, a number of commune councillors, one park director, one deputy park director, 20 rangers, and 200 families in four villages of Preak Thnout commune, Kampot district/province were selected for the interview and survey. In addition, one community PA, named Preak Thnout, was selected as case study.

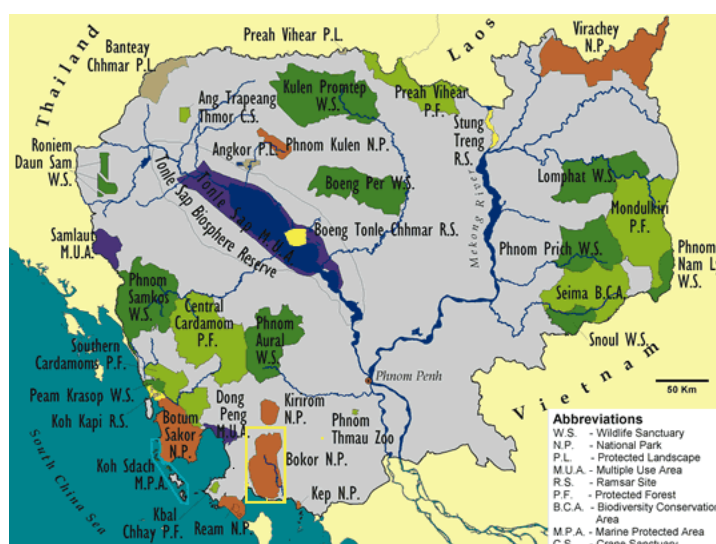
2. Background and Issues of Bokor National Park

The Royal Government of Cambodia has established 23 protected areas under the management of the Ministry of Environment; these are classified into seven national parks covering 871,250 ha, 10 wildlife sanctuaries covering 2,030,000 ha, three protected landscapes covering 97,000 ha, and three multiple use areas covering 403,950 ha (Royal Government of Cambodia 2003).

Preah Monivong “Bokor” National Park is one of the seven national parks, established by royal decree in November 1993.

2.1 Geography of BNP

BNP is located south of the Cardamom/Elephant Mountain Range; it has an area of 1,400 km² (140,000 ha) spanning four southern provinces (Kampot, Kompong Speu, Koh Kong and Sihanoukville). The park is hilly in the north and east with a plateau and escarpment in the west and southwest, which give the park a certain level of natural protection from encroachment. Altitude ranges



from 10 m to 1,079 m above sea level. The park contains the catchments area for one major river, Teuk Chhou, and a unique range of habitats, and supports a rich diversity of flora and fauna.

2.2 Communes Surrounding BNP

Bokor National Park shares a border with 17 communes in three provinces and one town: Kampot, Koh Kong, Kompong Speu, and Sihanoukville (Table 2).

Table 2: Communes and Villages in Four Provinces surrounding BNP

Town/Province	District	Commune	Village
Kampot	3	8	42
Koh Kong	1	4	15
Kompong Speu	1	1	22
Sihanoukville	1	4	20
Total	6	17	99

Kampot province has three districts sharing a border with BNP: Kampot, Kompong Bay and Chouk; eight communes: Preak Thnout, Koh Touch, Beung Touk, Mak Prang, Steung Kao, Andong Khmer, Ta Ken, and Tropaing Phlang; and 42 villages. Koh Kong is the southwest province of Cambodia and has eight districts; only one (Kompong Seila) shares a border with BNP. This district is subdivided into four communes: Steung Chay, Kompong Seila, Chamkar Lourng, and Ou Back Rotece; and 15 villages.

Kompong Speu is another province sharing a border with BNP. Among a number of communes in Phnom Srouch district, only Treng Tro Yeurng commune borders BNP, located at the northeast corner. This commune has 22 villages.

Sihanoukville is an international port city in southern Cambodia on the Gulf of Thailand (Wikimedia Foundation, Inc., n.d.). It is divided into three districts, also known as khans. However, only Khan Prey Nop shares a border with BNP. This khan has four communes: Teuk Thla, Teuk Lyok, Samerky, and Cheung Ko; and 20 villages.

2.3 Population Surrounding BNP

Data collected from the Department of Nature Conservation and Protection, Ministry of Environment, show that in 2006 the number of people living in the 17 communes surrounding BNP had increased to 108,288; of these, 54,447 were male and 53,841 were female. Altogether, they compose 21,403 families (Table 3).

Among the 17 communes that share a border with BNP, Treng Tro Yeurng commune was the most populous at 17,700 persons. Nearly half of all the communes have more than a thousand families each: Preak Thnout, 1,482; Koh Touch, 1,006; Andong Khmer, 1,844; Ta Ken, 1,798; Tropaing Phlang, 1,574; Kompong Seila, 1,282; Treng Tro Yeurng, 3,593; and Cheung Ko, 1,869.

The population in 11 communes surrounding BNP in 2000 totalled 50,212 persons, equivalent to 9,652 households. This number had increased to 65,386 persons in 2006, equivalent to a 30-percent growth.

Table 3: Number of People in 17 Communes surrounding BPN, 2006

Commune	Families	Persons	Males	Females
Preak Thnout	1,482	7,944	4,101	3,843
Koh Touch	1,006	5,246	2,565	2,681
Beung Touk	897	4,664	2,351	2,313
Mak Prang	864	4,733	2,323	2,410
Steung Kao	888	4,498	2,247	2,251
Andong Khmer	1,844	9,807	4,630	5,177
Ta Ken	1,798	9,462	4,825	4,637
Tropang Phlang	1,574	7,525	4,241	3,284
Steung Chay	464	2,123	1,057	1,066
Kompong Seila	1,283	6,181	3,091	3,090
Chamkar Lourng	518	2,491	1,228	1,263
Ou Back Rotece	967	4,970	2,595	2,375
Treng Tro Yeurng	3,593	17,700	8,982	8,718
Teuk Thla	876	4,648	2,300	2,348
Teuk Lyok	770	3,303	1,593	1,710
Samerky	710	3,556	1,706	1,850
Cheung Ko	1,869	9,437	4,612	4,825
Total	21,403	108,288	54,447	53,841

Source: Chor (2006)

Among the 11 communes, the population growth showed a slight increase, except in two communes where growth was high: Ta Ken commune, from 3,487 to 9,462 persons, and Tropang Phlang commune, from 1,657 to 7,525 persons (Figure 2).

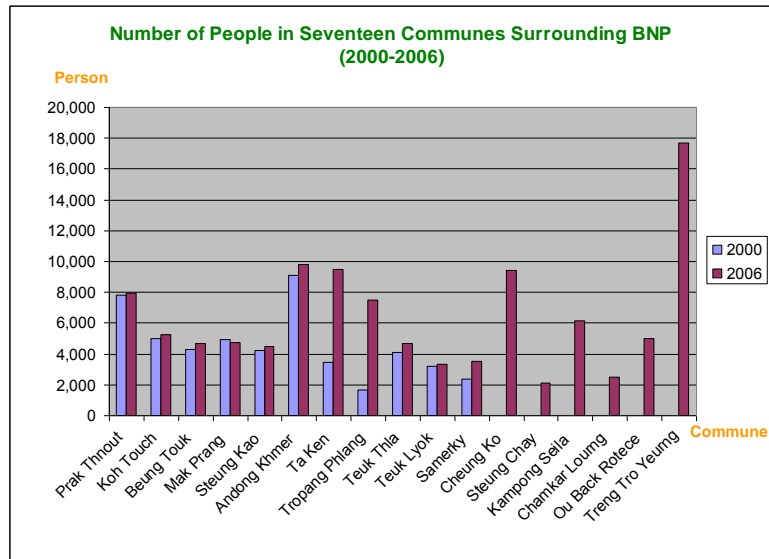


Figure 2: Population in Communes surrounding BNP, 2000-2006

There are no data available on the population in the other six communes (in Koh Kong and Kompong Speu provinces) before the year 2006.

The number of households in the 11 communes was 9,652 in 2000 while and the number of families in six out of eight communes in Kampot province was 6,011 in 2003. By year 2006, the number of families in 17 communes surrounding BNP had increased to 21,403 (Table 4).

Table 4: Number of Households and Families in 17 Communes, 2000-2006

Commune	Households (2000)	Families (2003)	Families (2006)
Preak Thnout	1,405	1,385	1,482
Koh Touch	905	899	1,006
Beung Touk	814	848	897
Mak Prang	904	873	864
Steung Kao	876	881	888
Andong Khmer	1,700	0	1,844
Ta Ken	816	0	1,798
Tropang Phlang	361	1,125	1,574
Teuk Thla	735	0	876
Teuk Lyok	588	0	770
Samerky	548	0	710
Cheung Ko	0	0	1,869
Steung Chay	0	0	464
Kompong Seila	0	0	1,283
Chamkar Lourng	0	0	518
Ou Back Rotece	0	0	967
Treng Tro Yeurng	0	0	3,593
Total	9,652	6,011	21,403

Preak Thnout had the second-highest population growth among the 17 communes surrounding BNP. This commune has four villages: Tropang Ropaov, Preak Kreng, Preak Thnout, and Chong Houn. Data on population growth in these four villages from 2005 to 2007 were collected.

In general, the number of families grew slightly from 2005 to 2007. Tropang Ropaov village had the highest number of families (626) in year 2007, while Preak Thnout village had the lowest number (254) (Figure 3).

Moreover, Tropang Ropaov village had the highest population (3,334 persons) in 2005. However, the number of persons decreased slightly, from 3,334 in 2005 to 3,264 in 2007.

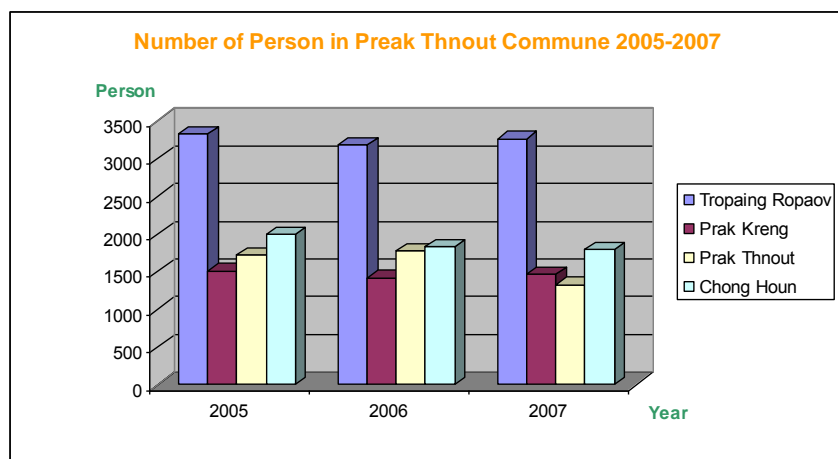


Figure 3: Number of People in Preak Thnout Commune, 2005-2007

2.4 Potential of Natural Resources

Bokor National Park has been shown to contribute significantly to local development through key sectors such as tourism, energy, water, and forestry.

The presence of large mammals such as elephants, tigers, leopards, bear sambars, gaurs and binturongs has been confirmed, in addition to an important population of pileated gibbon. Current data show that BNP holds 29 species of mammals, nine of which are endangered; 11 amphibious species; and nine reptile species (Mony 2007).

Over 300 bird species are thought to be present. The globally threatened green peafowl and the chestnut-headed partridge have been sighted, as have the blue-eared drongo, refocus-winged buzzard, and three species of hornbill. Eleven species of amphibians have been noted in addition to a variety of reptiles (Arceo and Cheung 2005).

A wide range of forest types are present, including dry dipterocarp and mixed deciduous in the north, but the forest is predominately moist evergreen. Bokor is rich in endemic flora, and its fens and bogs are an unusual feature. At least 38 rare plant species and 47 non-flowering plant species are found in BNP.

3. Economic Value of BNP

BNP is a popular leisure destination for both domestic and international tourists. It was used for recreation by colonial authorities and, in the 1960s, by affluent Cambodians. The mild climate, the scenic beauty of the forest, numerous waterfalls and viewpoints, and the history of the site are all part of its appeal. Tourism development is foreseen as becoming a major focus of the park (ADB 2000), and is ranked as the main source of income in the Management Plan for BNP (Department of Nature Conservation and Protection 1999).

BNP provides economic value to the provincial (Kampot) economy, categorised as follows (Arceo and Cheung 2005):

1. **Direct value** – refers to physical products that can be consumed directly, such as non-timber forest products (NTFP) by local communities; ox-cart logging; tourism; and human habitation. BNP provides many economic benefits for the surrounding villages, communes, and provinces. Local people generate resources for consumption, such as domestic energy (firewood, charcoal), food, construction materials and supplies for handicrafts, forest resources, wild animals, and plant-based medicines. Local people harvest some 46 species of NTFP that are used as food and construction or handicraft materials and for medicinal purposes (ADB 2000). The total value of NTFP harvested from BNP was estimated to be more than 570 million riel (USD 152,250) in 1998, with a sustainable harvest of only 250 million riel (USD 66,800) (Feil et al 1998).
2. **Indirect value** – refers to environmental functions and ecological services including regular and clean water supplies for Kampot town and other settlements; watershed and protected catchments for rice irrigation, oil palm, and agricultural plantations; watershed and protected catchments for hydropower; biodiversity; and habitats for rare and endangered species. The environmental and ecological services support life. BNP provides a catchment area for several rivers, including Steung Toek Chou, which flows south from the park and brings fresh water to Kampot town. About three-quarters of the park forms the watershed of another major river, Steung Toek Chham, which runs south to the coast of Kampot (Feil et al 1998).
3. **Option values** – refers to premium placed on future possible uses and functions. BNP has future opportunities for ecotourism, water development, and commercial application of wild species and gene pools.
4. **Existence value** – refers to intrinsic significance regardless of use. The natural resources of BNP have significant value for global biodiversity and national heritage; they have local cultural and spiritual values for both communities and society at large.

3.1 Contribution of Tourism to the Kampot Provincial Economy

Three sites in BNP (two waterfalls and the plateau area) among 10 tourist sites within Kampot province receive high numbers of visitors. It has been estimated that roughly 100,000 domestic and 1,250 international tourists stayed in Kampot town in 2001 (Arceo and Cheung 2005). About 8 percent of domestic visitors and 60 percent of international tourists visited the plateau and forest areas in BNP.

Another popular park destination is Toek Chou waterfall, a short distance from Kampot town. Many town residents and domestic visitors, as well as international tourists, go there. Visitor numbers are especially high on weekends and public holidays. The waterfall area is under the control of the Department of Tourism,³ which charges fees

³ The waterfall area is part of Bokor National Park. By law, it is the responsibility of and managed by the Ministry of Environment; however, in practice, the fee from tourism is controlled by the Department of Tourism. This issue is being discussed in the Council of Ministers.

for parking (3,000 riel) and collects a range of levies from the 100 or so small-scale restaurateurs, souvenir traders, and food sellers operating in the area.

Tourism in BNP thus has a major economic influence in the province, generating revenues for park and tourism agencies and through the multiplier effects of visitor expenditures. As well as the traders operating at Toek Chou waterfall, the two hotels, 21 guesthouses, and 23 restaurants (Kampot Provincial Office of Tourism 2006) in Kampot town benefit from park visitors, as do the owners of the 30 cars and 20 motorcycles available for hire.

3.2 Tourism Revenues for BNP Authorities

The Ministry of Environment authorities at BNP operate on an extremely limited budget. With core funding only sufficient to cover salaries (estimated at less than USD 10,000 a year), little money is available to carry out basic park management activities, let alone invest in equipment and infrastructure (BNP Ranger 2007). Although a small amount of donor support has been provided to the park in recent years, there is no guarantee that it will continue.

Tourism represents a small but significant source of earnings for park authorities. In 2000, tourism generated nearly USD 10,000 of revenues (Arceo and Cheung 2005) in park entry fees and parking charges for the Ministry. Even though tourism in BNP is relatively undeveloped, tourism income already equals the entire annual park budget received from the central government. Unfortunately, the Ministry of Environment is unable to retain all of this income at the park level; it is remitted to the Central Treasury, which returns just 50 percent (Arceo and Cheung 2005).

BNP has both local and international visitors. The Ministry of Environment charges the following park entry fees: 20,000 riel (USD 5) per international tourist, 5,000 riel (USD 1.25) per big car, and 3,000 riel (USD 0.75) per small car.

Data from the Department of Nature Conservation and Protection, Ministry of Environment, show that the number of international visitors increased greatly, from 700 visitors in 2002 to 2,300 visitors in 2004; however, the number dramatically dropped to 300 visitors in 2006 (Figure 4).

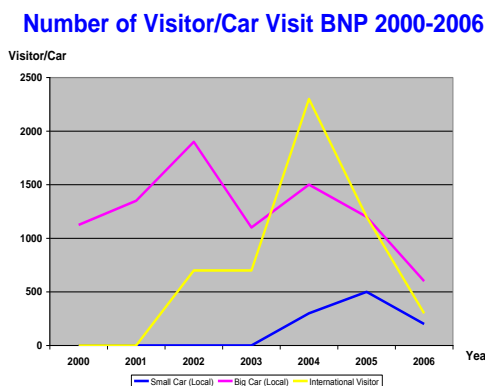


Figure 4a: Number of Visitors to BNP

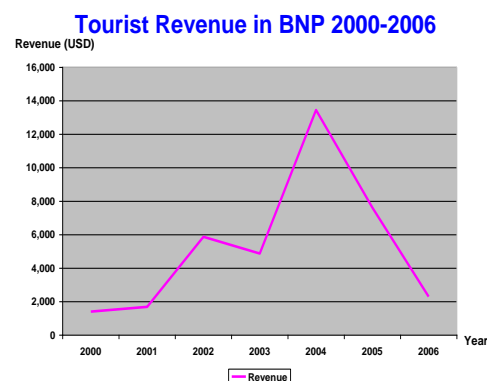


Figure 4b: Tourist Revenue in BNP

Local tourists have been visiting BNP since 2000. However, owing to poor road conditions, only big cars could drive up to the tourism site at the top of the mountain. In 2004, when the road was fixed, small cars could make it up. As with the international tourists, the number of local visitors increased in 2004 (Table 5).

Table 5: Number of BNP Visitors/Car, 2000-2006

Visitors/Car		2000	2001	2002	2003	2004	2005	2006
Local	Small Cars	--	--	--	--	300	500	200
	Big Cars	1125	1350	1900	1100	1500	1200	600
International Visitors		--	--	700	700	2300	1200	300

Source: BNP Ranger (2007)

Tourist revenues from BNP reached USD 1,406 in 2000 and USD 13,450 in 2004 (Figure 4b). From 2004 to 2006, revenues from both national and international tourists dramatically dropped to USD 2,300 (Table 6).

Revenues are generated from payment of the entry tickets only, collected by the Department of Nature Conservation and Protection, Ministry of Environment, through permanent park officers. Revenues from tourist services and facilities, such as accommodation (hotels, guesthouses), food (small eateries and restaurants), souvenirs, transportation facilities (car and motorcycle rental), and tourist guides were not included in this study.

Table 6: Tourism Revenues in BNP, 2000-2006 (in USD)

Year	2000	2001	2002	2003	2004	2005	2006
Revenue	1,406	1,687	5,875	4,875	13,450	7,625	2,300

Source: Department of Nature Conservation and Protection (2007)

However, measuring the value of tourism in BNP in terms of government revenue alone massively underestimates the park's total economic value and ignores its importance to the provincial economy.

Tourism in the park supports a high and growing level of private sector activity. Small-scale traders based in Kampot town gain significant income and employment from park-related tourist activities. More than 95 percent of the total estimated value of tourism in BNP (USD 675,000 a year) is due to the 150 or so local hotels, restaurants,

food sellers, and motorcycle and car operators. These businesses in turn generate more than USD 11,000 a year in local tax revenues (Arceo and Cheung 2005).

4. Land Use Activities in BNP

BNP covers a total area of 140,000 ha. About 94 percent of the total land area is well protected for natural or semi-natural conservation; the remaining 6 percent has been transformed (Figure 5).

Land in BNP is used for a variety of purposes. This study classifies land use in BNP into four categories: encroachment land (3,377.28 ha), investment and development land (970.67 ha), community protected area (CPA) (3,157 ha), and conservation or “no touch” area (132,495.05 ha, equal to 94% of the BNP total land area) (Table 7).

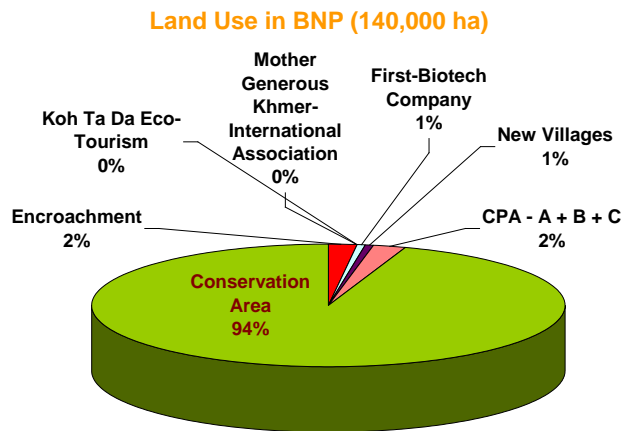


Figure 5: Land Use in BNP (140,000 ha)

Table 7: Land Use in BNP (140,000 ha)

Land Type	Land Size (ha)	Classification
Encroachment	2,654.28	Encroaching
New Villages	723.00	Encroaching
Sub Total	3,377.28	
Koh Ta Da Eco-Tourism	3.96	Development
Mother Generous Khmer-International Association	100.00	Development
Sub Total	103.96	
First-Biotech Company	866.71	Investment
Sub Total	866.71	
CPA – A (Preak Thnout)	2,006.00	CPA
CPA – B (Tropang Phlang) No function	678.00	CPA
CPA – C (Ou Touch)	473.00	CPA
Sub Total	3,157.00	
Conservation Area	132,495.05	Conservation
Sub Total	132,495.05	
Total	140,000.00	

4.1 Land Encroachment

Among 17 communes sharing a border with BNP, only eight are threatened by land encroachment. Those communes are Preaek Thnout, Koh Touch, Beung Touk, Mak Prang, Steung Kao, Andong Khmer, Kompong Seila, and Ou Back Rotece. Data on the total encroachment area, which equals 2,654.28 ha, were collected from seven communes only because those on Ou Back Rotece commune are not available (Table 8).

More than half (59%) of the total land encroachment is located in Kompong Seila commune, totalling 1,585 ha. Koh Touch is the second-largest encroachment commune, at 440 ha, equal to 17 percent of total land encroachment. Beung Touk has the least encroachment at only 28 ha or 1 percent of the total encroachment area. Andong Khmer and Preaek Thnout communes are similar in terms of encroachment level: 43 ha and 71 ha, respectively. Another similar pair of communes are Steung Kao (212 ha) and Mak Prang (274 ha) communes (Figure 6).

Table 8: Encroachment Size in Seven Communes surrounding BNP

Commune	Land Size (ha)
Preaek Thnout	71.34
Koh Touch	440.60
Beung Touk	28.22
Mak Prang	274.32
Steung Kao	211.82
Andong Khmer	42.56
Kompong Seila	1,585.42
Total	2,654.28

In addition, two new villages (Anlong Khmang Leng and Steung Khbal Damrey) have been unofficially created in Ou Back Rotece commune, Koh Kong province. These villages have encroached on 723 ha of BNP land for settlement and other purposes.

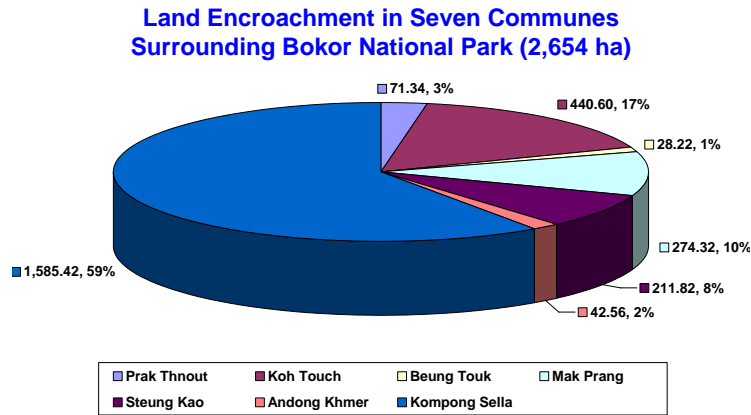


Figure 6: Total Land Encroachment in BNP (2,654.28 ha)

Almost all land encroachment in BNP is not officially recognized by the Ministry of Land Management, Urban Planning and Construction. There were 26 encroachers on an area of 42 ha in Andong Khmer commune; all of them have no land title. Only 48 of 243 encroachers in Mak Prang commune and 71 of 193 encroachers in Koh Touch commune have land titles. Likewise, all 24 land encroachers in Preak Thnout and 11 of 13 encroachers in Beung Touk commune have land titles (Youthearith 2005).

People clear and take land in BNP for a number of purposes. Establishment of agricultural and industrial plantations is the major reason. In addition, migrants tend to settle in BNP and establish unofficial villages (Figure 7).

4.1.1 Agricultural and Industrial Plantations

The soil in BNP is highly fertile, offering high potential for agricultural and industrial plantations. The main agricultural plantations within the park grow corn, rice, or mixed vegetables. The major industry plantations grow durian, banana, mango, or a mixture of these crops (Table 9).

Table 9: Plantation and Land Use in Encroached Areas in Seven Communes

Plantation	Size (ha)	Type	Year
Corn	8.14	Agricultural	2005
Farm	17.71	-	-
Rice Field	102.96	-	-
Watermelon	97.28	-	-
Vegetable	5.43	-	-
Banana	77.89	Industrial	-
Cashew	1.7	-	-
Durian	107.47	-	-
Jackfruit	2.75	-	-
Mango	19.98	-	-
Orange	16.28	-	-
Mixed Plantation	229.07	-	-
No Action	282.64		-
Unknown	1684.98		-
Total	2,654.28		

The local people in areas surrounding BNP use 232 ha of the encroached land for agricultural plantations and 377 ha for industrial plantations. Similar to those inside the park, the agricultural plantation surrounding BNP grow corn, rice, watermelons, and vegetables. The industrial plantations, on the other hand, grow bananas, cashews, durians, jackfruits, mangos, oranges, and a mixture of these crops. Rice, durians, and mixed plantations account for the majority of the plantations, with over 100 ha each.

4.1.2 New Villages

Recently, two new villages, Andong Khmang Leng and Steung Kbal Damrey (Table 10), have been actively encroaching land in Ou Back Rotece commune, Koh Kong province, taking over a total of 723 ha (inside the boundary of BNP).

Encroachment started in 2005 in Anlong Khmang Leng, and then stopped for a long time when the Ministry of Environment took action to suppress illegal land encroachment activities within protected areas. However, encroachment started again in early 2007. Currently, there are 52 settlements in the village.

Table 10: New Unofficial Villages in BNP

Village Name	Land Size (ha)	Settlement	Year
Andong Khmang Leng	187.00	52.00	2005-2007
Steung Kbal Damrey	536.00	119.00	2005-2007
Total	723.00	1721.00	

Another new village, Steung Kbal Damrey village, is a hot spot in terms of land encroachment in BNP at present time (Figure 8). This new village has 119 settlements, whose inhabitants include people who have migrated from 10 different provinces throughout the country, namely: Kompong Speu, Prey Veng, Koh Kong, Kampot, Kompong Cham, Takeo, Kandal, Svay Rieng, Kompong Chhnang, and Phnom Penh.



Figure 8. New Village in Steung Khai Damrey

Andong Khmang Leng and Steung Kbal Damrey these two new villages have continued with their encroachment activities. Hence, the Ministry of Environment, under the Department of Nature Conservation and Protection, has been cooperating with local authorities, relevant institutions, and NGOs to compile a list of cases in order to be able to submit a complaint to the court. This case is currently being processed but the encroaching activities are still going on. Recently, episodes of conflict between encroachers and the Ministry of Environment have become more serious as encroachers have started to use violence. This has made it difficult for park officers to collect evidence and data on this issue.

4.2 Investment and Land Development

Koh Ta Da Ecotourism requested land from H.E Ngim Vanda in 2005 for development into an ecotourism site. This is about 4 ha, located in Andong Khmer commune, Kampot district/province. It was inaugurated in 2006, with the attendance of a representative from the Ministry of Environment.

First-Biotech Company is an agro-industrial company investing in industrial plantations under the coordination and management of the Ministry of Agriculture, Forestry and Fisheries. This company established a plantation in 2005 in a large open space outside of BNP, although 866 ha are within the boundary of BNP. The Ministry of Environment plans to claim back the encroached area for BNP.

Mother Generous Khmer-International Association took 100 ha of BNP land in 2005 for use to improve and support the local community's livelihoods with sustainable use of natural resources in BNP. Land use planning and other development planning were prepared by the association with technical support from the Ministry of Environment.

4.3 Community Protected Areas

Community protected areas are an initiative of the Ministry of Environment, aimed at encouraging all stakeholders, especially local communities, to be involved in protected area conservation and management with sustainable use of natural resources. Since 2004, three CPAs have been established in BNP (Table 11). One CPA has officially been recognised by local authorities and relevant institutions, and two CPAs have been identified by a prakas of the Ministry of Environment.

CPA A, known as Preak Thnout Community was established by virtue of Ministry of Environment Prakas No. 100 dated 17 March 2003 (CPA-A 2007). The prakas identified a total of 2,006 ha for sustainable use of natural resources by the local people. With technical support from the General Department of Administration for Nature Conservation and Protection (GDANCP) (formerly Department of Nature Conservation and Protection) and financial support from the Wildlife Conservation Society (WCS), CPA A was officially recognised by local authorities and relevant institutions/agencies in February 2004. This community, composed of 500 families, was organised by four villages in Preak Thnout commune, Kampot district/province.

CPA B was established in 2005 with a total area of 3,572 ha; almost all of the area is located outside BNP, except 678 ha which encroaches on BNP. CPA B, or Ou Touch Village, Tropang Phlang Community, is not yet functioning because the boundary has not yet been clearly delineated.

CPA C is the most recently established community. It receives financial support from WWF and was declared as a CPA in BNP by Ministry of Environment Prakas in early 2007. The main objective of this community is to cultivate a rattan and bamboo plantation to supply materials to the local people for handicrafts. This commune, with a land area of 473 ha, is located in Andong Khmer commune, Kompong Bay District, Kampot province.

Table 11: Community Protected Areas in BNP

Name	Location	Size (ha)	Year	Purpose
CPA A	Preak Thnout	2,006	2004	Manage natural resources with sustainable use
CPA B	Tropang Phlang	678	2005	Not functioning; 2,894 ha outside BNP; responsibility with MAFF
CPA C	Ou Touch	473	2007	Rattan and bamboo plantation for local handicrafts
Total		3,157		

5. Government Policies and National Legislations

There are several national policies and pieces of legislation related to environmental management. All relevant policies, laws, legislation documents, strategic plans and useful legal documents related to the issues of land encroachment, land management, protected area management, forestry management, and natural resource conservation and management are reviewed in detail below.

5.1 Constitution

In the Royal Government of Cambodia's Constitution of 1993, two articles are relevant to the purposes of this research: one on the definition of State land and the other on natural resources protection and management.

Article 58: State property notably comprises land, mineral resources, mountains, sea, underwater, continental shelf, coastline, airspace, islands, rivers, canals, streams, lakes, forests, natural resources, economic and cultural centres, bases for national defence and other facilities determined as State property.

Article 59: The State shall protect the environment and balance of abundant natural resources and establish a precise plan of management.

5.2 Government Policies

The Royal Government of Cambodia's policy is split into two categories: national policy and sector policy. National policies relevant to this study are the Rectangular Strategy of the Royal Government of Cambodia, the Political Platform of the Royal Government of Cambodia, the Millennium Development Goals of Cambodia, the Royal Government of Cambodia's Second Five-year Socio-economic Development Plan, and the Royal Government of Cambodia's National Poverty Reduction Strategy. There are only three specific sector policies relevant to this study. These are the Forestry Policy, the Land Policy, and the Strategic Framework for Decentralization and Deconcentration Reform.

5.2.1 National Policies

Political Platform of the Royal Government of Cambodia: The political platform of the Royal Government of Cambodia for the third legislature of the National Assembly has set out a number of policies for implementation. One policy focuses on reform in a number of sectors. Two sectors listed in the Government Reform Policy are land administration reform and natural resource management.

Land administration reform mainly focuses on the continuation of the implementation of the Land Law and Land Policy, which consist of strengthening equitable management, allocation, and use of land; and ensuring economic efficiency through land registration, land allocation, prevention of land grabbing, elimination of anarchic illegal land ownership, and implementation of proper measures to prevent land speculation without it being used for production or business. The Royal Government will give priority to strengthening the right of land ownership for citizens who need land for residence, business and family within the framework of social concessions.

Reforms in natural resource management focus on strengthening sustainable environmental protection and management, based on three important pillars:

1. Sustainable forest management policy: with strict monitoring of forest exploitation according to international best practices in forest management that require adequate forest reserves for domestic consumption and protection against droughts and floods
2. System to protect natural resources, biodiversity conservation, and endangered species
3. Implementation of community forest development programmes that are sound, transparent, and locally managed

Rectangular Strategy of the Royal Government of Cambodia: The Rectangular Strategy sets out several issues at the forefront of the political agenda of the Royal Government of Cambodia in the third legislature of the National Assembly. These include: (a) promotion of economic growth; (b) generation of employment for all Cambodian workers; (c) implementation of the Governance Action Plan, thereby ensuring equity and social justice; and (d) enhancing efficiency and effectiveness of the Royal Government in implementing *reform programmes in all sectors to reduce poverty and achieve sustainable development*. In this regard, the Royal Government has set out the Rectangular Strategy as a supporting tool to implement the Political Platform of the Royal Government to attain poverty reduction, development, progress, prosperity, national harmony, and happiness for the Cambodian people.

The first component of the Rectangular Strategy is Enhancement of Agriculture. This covers: (a) improved productivity and diversification of agriculture; (b) land reform and clearing of mines; (c) fisheries reform; and (d) forestry reform. Those listed in (b) and (d) follow the statements within the Political Platform of the Royal Government of Cambodia.

Millennium Development Goals of Cambodia (CMDGs): In order to achieve the UN Millennium Development Goals set out in the UN Millennium Declaration, the Royal Government of Cambodia has set out the Millennium Development Goals for Cambodia

(CMDGs). These consist of many targets; Target 7 focuses on ensuring environmental sustainability.

Royal Government of Cambodia's Second Five-year Socio-economic Development Plan (SEDP II): This is a policy document focusing on a broad variety of developmental issues, with a concentration on actions to be taken to stimulate economic growth and private sector development.

The document recognises that deforestation has led to negative impacts on the ecosystem and to climate change.

Royal Government of Cambodia's National Poverty Reduction Strategy (NPRS): The NPRS covers a broad range of issues impacting poverty reduction within Cambodia. The policy also lists objectives, possible measures to be taken, measurable indicators and targets set to specific time lines and the agencies responsible for carrying out actions. Some of the key actions can be linked to protected area management, as follows:

- Draft sub-decree on land use plans, which clarifies management responsibilities and user rights over land surrounding natural resources areas;
- Improvement of agricultural land use based on soil classification, mapping, and soil degradation prevention measures

5.2.2 Sectoral Policies

Land Policy: This policy includes a Statement of the Royal Government of Cambodia on Land Policy (May 2001) and the Strategic Land Policy Framework (currently under preparation). Both documents suggest that local land use plans need to be developed for priority areas (tourism and investment zones) and for sustainable management of natural resources. At the same time, land management and planning authorities need to be decentralised to local and provincial authorities in line with the overall governance policy of promoting deconcentration and decentralisation.

Forestry Policy: This document indicates the objective and commitment to broad management principles in the forestry sector. The objective of this policy is to put forest estate under sustainable management and conservation, including the restoration of degraded forests with the participation of local communities and the private sector.

5.2.3 Laws

Law on Environmental Protection and Natural Resource Management: This law has the general purpose of outlining provisions and procedures for creating national and regional action plans based on identified environmental priorities; conduct and review of environmental impact assessments (EIA); protection of natural resources through consultation with other ministries; monitoring and controlling pollution or other activities that could harm the environment or public health; and creation of mechanisms whereby there can be public participation, including meaningful access to information, in all activities.

Forestry Law: The aim is to promote public participation in any government decision that has the potential to have a heavy impact on citizens in general, livelihoods of local communities, and forest resources of the Kingdom of Cambodia; and to conduct

environmental and social impact assessments (ESIA) for any major forest ecosystem-related activities that may cause adverse impacts on the society and the environment. Any final decision by the Royal Government on major forest ecosystem-related activities must consider the recommendations of the final EIA.

Land Law: This law has the objective of determining a regime of ownership for immovable properties in the Kingdom of Cambodia for the purposes of guaranteeing the rights of ownership and other rights related to immovable property, according to the provisions of the 1993 Constitution of the Kingdom of Cambodia. It also outlines the general rules and definitions related to State public and State private properties. State public properties refer to any property that has a natural origin, such as forest, courses of navigable or floatable water, natural lakes, banks of navigable and floatable river and seashores; and any property that is made available, either in its natural state or after development for public use such as schools, hospital etc. (Article 15). All State public properties ***cannot be sold or exchanged but they can be given over for temporarily use or management.*** When State public properties can no longer provide a public service, then they will be converted to State private lands by secularisation law (Article 17). State private lands can be sold, exchanged, distributed, or transferred for social purposes (Article 17). The process of selling and granting land for social land concessions shall be determined by sub-decree and other legal instruments as necessary. The Land Law also recognises the community lands of minorities living in Cambodia (Article 25). The community lands of minorities will be demarcated according to the confirmation of such minority groups.

Protected Areas Law: Chapter 8 of the law defines permissions, prohibitions, and ESIA's within protected areas. ***Any activities that may cause damage or impact protected areas must be prohibited.*** This draft law has six specific objectives: (1) to define the jurisdiction and responsibilities of the Ministry of Environment in the management of the National Protected Areas System (NPAS); (2) to manage and implement effectively the conservation of biodiversity and sustainable use of natural resources within the NPAS; (3) to determine the standards and procedures for the management of the NPAS; (4) to provide the mechanisms and procedures to establish protected areas or to modify their category; ***(5) to define the responsibilities and involvement of protected areas communities and the public at large;*** and (6) to implement regional and international conventions, protocols, and agreements pertaining to the protection of biodiversity and ecosystems inside the NPAS. Chapter 5 of the draft PA law sets up a zoning mechanism allowing for different activities to occur within designated protected areas. The zones include: (1) **core zone** – area(s) containing biodiversity, natural resources, ecosystems, and genetic resources of high value for scientific research of nature and for sustainable use of the environment; (2) **conservation zone** – area(s) adjacent to the zone for access by local communities and people living within and next to the PA. The utilisation of resources is allowed in accordance with a prakas issued by the Ministry of Environment; 3) **buffer zone** – zones where any action in one or more of the following areas takes place: conservation of national culture and heritage, ecotourism, protection and rehabilitation of biodiversity, establishment of botanical gardens, or special protection and use (irrigation systems, reservoirs, hydro-stations, electricity networks, public infrastructure, and infrastructure for the management of the PA); (4) **community zone** – area(s) for the socioeconomic development of the local communities, which may contain

residential land, rice field, or growing land (chamkar). The establishment of this zone shall be defined by a sub-decree.

This draft law was adopted by the Council of Ministers in 2006 and submitted to the National Assembly for adoption. It was put in the National Assembly agenda in December 2007.

5.2.4 Royal Decrees

Royal Decree on Protected Areas Management: This royal decree contains six articles approved by King Norodom Sihanouk on 1 December 1993. It states roughly the rights and responsibilities of the Ministry of Environment in protecting the environment, soil, forest, wetlands, and coastal zones within national protected areas. It defines 23 protected areas to be turned into national protected areas, divided into four categories: seven national parks, 10 wildlife sanctuaries, three landscape protected areas, and three multiple purpose protected areas. Article 3 of this royal decree states that these protected areas can be extended in the future if scientific information specifies a need to conserve biodiversity or landscape protection.

Royal Decree on Watershed Management: This royal decree focuses on the management and protection of the forest within watershed areas in the Kingdom of Cambodia. Its main purpose is to prevent soil erosion; protect soil fertility, water sources, and water quality; reduce surface runoff; stabilise ground water recharge; and preserve biodiversity and environmental equilibrium (Article 3). The selection of forest areas within the watershed for management and development is defined by a sub-decree (Article 4). Any development of forest and NTFP exploitation within the watershed shall be approved by a sub-decree (Article 6).

5.2.5 Sub-decrees

Sub-decree on the Organisation and Functions of the Ministry of Agriculture Forestry and Fisheries (MAFF): The sub-decree states that MAFF has authority over all watershed management in the country, though there is also general statement related to promoting the living standards of the citizenry and to encouraging participation in the preparation of policies on the reform and use of land and preservation of natural resources in agriculture (Article 3). It also emphasises the role and responsibilities of the Forestry Administration (FA) to prepare projects, legal texts, regulatory acts, and directives for the protection and management of forest resources exploitation, wildlife preservation and hunting; to participate in the determination of environmental protection measures and design plans for governing forest land, forest reserved for wildlife shelters, natural protection zones, and reforestation zones; and to assist and encourage initiators who wish to protect and realise forestry and wildlife resources and concentrate on forest communities (Article 18).

Sub-decree on Community Forestry Management: This sub-decree aims to define the development and management of forest communities and the utilisation of community forest throughout Cambodia. The sub-decree states the rights of local communities to ask to set up forest communities by writing to the FA at the cantonment level (Article 6). This sub-decree also states that forest communities have the right to plan, collect, and sell

wood products and NTFPs, but the collection of wood products for sale or exchange is prohibited within the first five years after the approval of the community forestry management plan (Article 12).

Sub-decree on Organisation and Functions of the Ministry of Land Management, Urban Planning, and Construction: This sub-decree determines the establishment of all departments of the Ministry of Land Management, Urban Planning, and Construction, and delineates the mission of the ministry and the functions of the general departments and line ministries throughout the country.

Article 2 of the sub-decree outlines the ministry's mission to direct and manage the affairs concerning land management, cadastre, and geography in Cambodia, except in any areas of competency for which the Royal Government has authorised other institutions.

The sub-decree also defines the tasks of the ministry in preparing and carrying out the Land Management Policy; in conducting and making prospective analyses of land management; in keeping an eye on the coherent development policy of all sectors; and in firming up the relationship between ministerial and provincial–municipal activities to enable cooperation with relevant ministries and between ministries and institutions. The ministry is to act also as a headquarters for the collation of physical, economic, social, and demographic data in order to be able to formulate a strategy to determine important zoning rules for economic development, industrial development, urban areas, rural areas, natural conservation, tourism sites, and patrimony protection zones as well as locations of socioeconomic infrastructure, communications, public administration and other areas, as fixed by the Royal Government.

Sub-decree on Social Land Concessions: This sub-decree has the objective of defining the criteria, procedures, and mechanisms for the granting of social land concessions for residential use and/or family farming. Article 2 defines the meaning of the terms used in the sub-decree: That is, *social land concession* is a legal mechanism to transfer State private land for social purposes to the poor who lack land for residential and/or farming purposes; *social concession land* is the land that is the subject of a social land concession; *family farming* refers to family cultivation or animal raising to meet basic needs.

Article 3 of this sub-decree states that social land concessions can be granted for social purposes, such as providing land to poor homeless families for residential purposes and to poor families for family farming; to resettle families who have been displaced as a result of public infrastructure development, families affected by natural disaster, and repatriated families; and to demobilised soldiers and families of soldiers who were disabled or died in the line of duty.

Sub-decree on Sporadic Land Registration: This sub-decree determines the procedures related to the sporadic registration of all immovable properties in areas not yet declared as adjudication areas throughout the country. The General Department of Cadastre and Geography (GDCG) is responsible for the overall coordination and supervision of the implementation of this sub-decree. The District/Khan Cadastral Administration is responsible for demarcation, measurement, and adjudication of all parcels to be registered under this sub-decree within its territorial competence. If the District/Khan Cadastral Administration does not have enough technical capacity to register land under this sub-

decree, it may request help from the Provincial/Municipal Cadastral Administration as regards demarcating, measuring, and adjudicating.

Sub-decree on the Procedures to Establish the Cadastral Index Map and Land Register: This sub-decree determines the procedures for establishing the Cadastral Index Map and Land Register through systematic adjudication of areas declared as adjudication areas, as stated in Article 2. This sub-decree is a very important legal instrument in land registration, issuance of land titles, and resolution of land disputes.

5.2.6 Declarations (Prakas)

Prakas on Measurement to Eliminate Anarchy in Land Encroachment (RGC-1999): This prakas determines 11 precautionary steps to prevent and eliminate land encroachment in protected areas. The first step states that no private property shall be allowed on State public land, such as all categories of protected areas and reserve areas. The third step guides local authorities in finding out about anarchical activities of land encroachment in protected areas.

Prakas on Measurement to Manage and Eliminate Anarchy in Forestry Sector (RGC-1999): This prakas identifies 17 precautionary steps to eliminate anarchical activities in the forestry sector. It mentions land grabbing, encroaching on land, and clearing of trees in protected areas, with the intention of using such land for development purposes, as serious problems that need to be solved urgently.

Prakas on Establishment of a Mechanism for Monitoring Illegal Deforestation and Eliminating Anarchy in the Forestry Sector and Protected Areas (MoE-1999): This prakas lists eight decisions to establish a mechanism for the monitoring of illegal deforestation in protected areas. It adds more roles and responsibilities to the Department of Inspection of the Ministry of Environment in following up on, monitoring, and evaluating illegal deforestation activities.

6. Community Involvement in Land Encroachment

There are several causes leading local people to be involved in land encroachment in BNP. These include poverty, migration, high value of land, development pressure, and lack of law enforcement.

6.1 Poverty

Poverty is a major factor pushing people to encroach on land that do not belong to them. This research shows that a number of people have sold their rice fields, farms, land, and even houses to support their daily livelihoods. As there is a demand for agricultural fields, they then would clear forest areas surrounding the national park (free land) so they could farm them.

Also, the population grows every day, and expanding families need more land for settlement and other uses. Because land is often privately occupied, the convenient option for them is to encroach on national park areas.

Some families grab land for commercial purposes, for example, selling cleared land to traders when the prices are acceptable; then they encroach again on other areas and do the same, sometimes several times.

People who are jobless are hired by middlemen to cut down trees, burn the forest, and clear the land. Workers receive a daily wage. This labour cost is much lower than the price of the land that the owner can get when it has been occupied for a while or when crops are planted on it.

Another reason is economic growth and the influence of foreign cultures. People exhibit a trend toward demanding more material goods. There is a high demand for new technology and equipment, which pressures families into finding a faster way to earn more money. This pushes people to exploit natural resources in an unsustainable manner.

The results of the survey in Preak Thnout commune show that the majority of the local people work in farming or fishing. They earn on average from 3,000 to 5,000 riel per day (or night) for fishing; approximately 5,000 riel per day for labour during rice harvest; 10,000 riel for three days selling handicrafts from NTFPs; and 10,000 to 15,000 riel for one piece of timber from the park (it takes only a few hours to do this kind of work).

Data collected in two communes (Preak Thnout and Beung Touk) in Kampot district/province indicate the living conditions of the local people from 2005 to 2007. Living conditions are classified into three categories: very poor (income of 5,000 riel per day), poor (income of 15,000 riel per day), and rich (income of 30,000 riel per day).

Table 12: Living Conditions of Local People in Preak Thnout and Beung Touk Communes, Kampot District, Kampot Province

Living Condition	Preak Thnout (Families)			Beung Touk (Families)		
	2005	2006	2007	2005	2006	2007
Very Poor	113	69	69	64	95	76
Poor	50	42	33	N/A	N/A	N/A
Total No.	163	111	102	857	901	937
Living Condition	Preak Thnout (%)			Beung Touk (%)		
	2005	2006	2007	2005	2006	2007
Very Poor	70.00	62.16	67.65	7.5	10.54	8.11
Poor	30.00	37.84	32.35			

Source: Phirun (2007)

Table 12 shows that the living conditions of the local people in Preak Thnout commune fall into only two categories: very poor and poor. The “very poor” category

holds a high number: 113 families, equal to 70 percent of the total number of families in 2005, and 69 families, equal to 62 percent in both 2006 and 2007. Those with “poor” living conditions account approximately 30 percent for all years (2005-2007).

Only data on „very poor’ living conditions are available in Beung Touk commune. The number of people in this condition is 7-10 percent lower than in Preaek Thnout commune.

In general, the number of very poor people has slightly decreased in Preaek Thnout commune, but somewhat increased in Beung Touk commune from 2005 to 2007.

6.2 Migration

People move from one place to another in search of better living conditions. BNP can provide a variety of NTFPs to support livelihoods. Sometimes, people sell their land then migrate to other places, but when they cannot adapt or the new place does not provide a better life for them, they return to their former villages. However, if their property has been sold already, they would then usually encroach on and clear the land in BNP.

This research shows that two new unofficial villages have been established as a result of internal and external migration. Among the 1,721 people in the settlements, at least 50 percent come from outside.

There are a number of reasons why people migrate from one area to another. The reasons include natural disasters, joblessness, and poverty. Natural disasters such as droughts and floods are serious concerns that destroy a large amount of agricultural and industrial materials every year. In addition, unsustainable use of natural resources leads to joblessness for local people. For instance, the survey results showed that 80-90 percent of people in Preaek Thnout commune are fishermen and fishing factory workers. Their daily income comes from marine resources near the national park. However, owing to a shortage of resources, there are no fish left to catch. Fishermen have lost their means of livelihood and factories offer no work, thus fisher folk and factory workers end up jobless.

6.3 High Value of Land

The price of land throughout the country has become increasingly unpredictable. When land price is high, people in the areas surrounding the national park would sell their land and move to live in the park. Owing to the high value of land coupled with the demands for agriculture and settlement, the incidence of encroachment has become very high.

In some cases, people take advantage of existing laws and regulations. For example, they would form as a community and request a certain area of land from the government for community use. After the land is officially recognised as the property of the community, it is divided up and offered to each member for individual purposes. Sometimes, the land is converted to a commercial area then sold as an investment.

Another form of encroachment involves buying land in advance. Middlemen use cash as an incentive to attract and encourage the local people, especially very poor

people, to clear land and sell it to them. The price of the land is paid in advance. This means that land is bought before it even exists, and to respect the agreement or because the money has already been received, people have to encroach on and sell land that belong to the park. There is no understanding of the concept that the park land is free for the general public.

6.4 Development Pressure

Owing to the rapid economic growth of the country, land has become of high demand for multiple uses or for investment, such as for agricultural products to supply food factories, for hydropower, for ecotourism, for entertainment, and for other commercial purposes.

This research shows that more than 970 ha of the BNP's 140,000 ha are being used for development and investment by private companies. This number does not include new areas that are being requested for other development purposes by private companies. The amount of development and investment land in BNP is likely to increase if the government approves the many pending investment proposals.

6.5 Lack of Law Enforcement

There are a number of laws and regulations related to land; natural resources, protected area management, and sustainable development (see Section 5). However, the implementation of these regulations is limited owing to insufficient human resources, limited capacity of legal officers, lack of legal understanding, lack of participation of the various stakeholders, poor cooperation and collaboration among related institutions, and partial corruption (Figure 9).

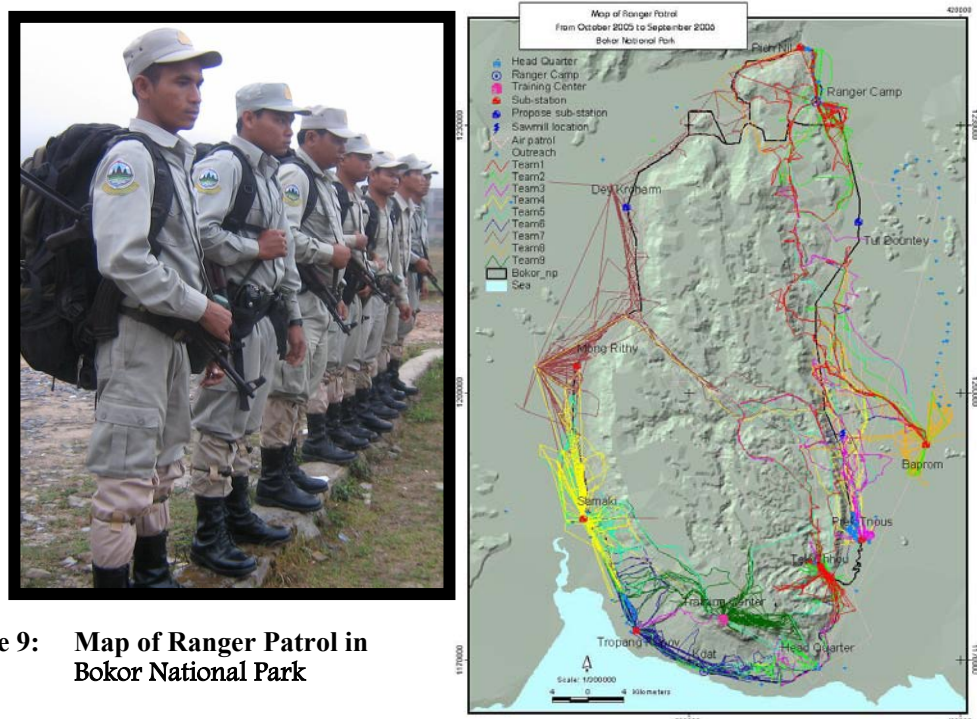


Figure 9: Map of Ranger Patrol in Bokor National Park

These issues result in ineffective encroachment prevention and outlawing within the national park and protected areas. For instance, when people encroach on park land, it takes time for the complaint case to proceed in the courts. Court procedures can take up to five years. During this period, people see no reaction from the government and park authorities, and nobody is arrested or punished; at the same time, encroachers can earn a great deal of money, so they carry on with their encroaching activities.

Data from the park management highlight a number of illegal cases that have come up and gone to the court, as shown in Table 13.

Table 13: Law Enforcement Activities in Bokor National Park

Activity	2001	2002	2003	2004	2005	2006	2007	Total
Number of perpetrators agreeing to stop encroaching on land	471	1062	454	569	741	808	492	4,597
Number of cases in the courts	0	6	3	4	5	4	4	26

Source: Mony (2007)

7. Problems and Challenges for BNP Management

The General Department of Administration for Nature Conservation and Protection, Ministry of Environment, faces many challenges and difficulties in BNP management.

7.1 Resources for BNP Management

As mentioned in section 3, BNP provides many benefits for the social and economic development of Komport province and the nation as a whole. This potential puts pressure on the BNP management, especially in the difficult task of promoting sustainable use of natural resources. For effective management and conservation of the park's natural resources, sufficient resources, both human and finances, are needed. Unfortunately, since the park was established in 1993, there has been very limited external technical and financial support such as from international organisations and donors. The operations of BNP are mostly dependent on government funds. The government spends approximately USD 8,000-9,000 per year for rangers' salaries; this cost excludes operational expenses.

Mr. Young Phirum, BNP Director at the time of this study, estimated that the adequate fund to support an effective park management is about USD 7,000-8,000 per month. This amount would cover the cost of supplies such as food, medicine, field material; supplementary salary for rangers; and other operational expenses.

The challenges for park management are not only insufficiency of financial resources but also of human resources. At the time of the research, there were only 55

rangers who patrol a total area of 140,000 ha, and they have a limited capacity to deal with various forms of illegal activities including land clearance for farming and land encroachment.

Recognising the limitation in number and capacity of rangers to manage the BNP, the General Department of Administration for Nature Conservation and Protection plans to increase the number of rangers from 55 to 80 in 2010 and to construct 12 sub-stations addition to the 8 existing ones.

7.2 Other Challenges

Aside from financial and human resource constraints, the BNP faces other challenges, which include the following:

1. Law enforcement is limited and laws do not facilitate the prosecution of illegal activities.
2. Poverty and migration from one area to another make it difficult for park officers and rangers to control land encroachment.
3. There is lack of involvement by the local people in BNP management as people do not understand the value of BNP and the impact of the unsustainable use of park natural resources.
4. There is pressure from high-ranking people and national army officers who are on duty near BNP or used to be assigned in the province.
5. Cooperation and collaboration between local authorities and relevant institutions on BNP management are limited.
6. Rangers and park officers often suffer from malaria.
7. Local communities surrounding BNP mainly depend on natural resources from BNP for their livelihood.
8. Natural fires occur every year and the park does not have enough equipment to deal with such disasters.
- 9.

8. Recommendations

To overcome the above challenges and to prevent and forbid encroachment activities in Bokor National Park, it is necessary to have the participation of all stakeholders, including the government, local authorities, civil society, the public sector, the private sector, local communities, and donors. Looking at the research findings, the different stakeholders should consider the recommendations given below.

8.1 Government

The Royal Government of Cambodia should consider the following actions that could help to solve the problem of land encroachment in Bokor National Park:

- Improve law enforcement and juridical reform.
- Build the capacity of park officers and rangers.
- Increase the number of rangers, improve and build their capacity.
- Increase funding for park operation and equip park rangers.
- Mobilize resources and promote ecotourism.

- Improve income generation of local people and find alternative jobs for them to support their families so that they will not have to depend only on the BNP's natural resources.
- Improve public awareness on sustainable use of natural resources.
- Educate local communities on the effects of damaging the ecosystem and natural resources.
- Hold public education on the value and benefits of Bokor National Park, including the high potential for ecotourism to provincial economies.
- Apply decentralisation and deconcentration approach; grant more responsibility to local communities and local authorities as regards BNP management and conservation.
- Encourage the establishment of CPAs focused on natural resource management and land use management.

8.2 Related Institutions

Related institutions, especially the Ministry of Agriculture, Forestry and Fisheries (MAFF), the Ministry of Land Management, Urban Planning, and Construction (MLMUPC), the Ministry of Rural Development (MORD), the Ministry of Industry, Mines and Energy (MIME), the Ministry of Interior (MOI), the Ministry of Justice (MOJ), and the Ministry of Commerce (MOC), should closely cooperate and collaborate with the Ministry of Environment, General Department of Administration for Nature Conservation and Protection to eliminate land encroachment in Bokor National Park.

Moreover, local authorities should play a significant role and take responsibility for preventing encroachment activities. They should immediately inform park headquarters of any illegal activities causing damage to the park's natural resources. Not authorising or confirming any land sale or purchase agreement involving BNP areas is of urgent and prime importance and would go a long way in helping eliminate land encroachment.

8.3 Civil Society

Civil society should advocate against all forms of natural resource degradation and land encroachment activities, taking into consideration investment and development goals.

National and international organisations should provide both financial and technical support to park officers and rangers. NGOs could guide local communities in improving their income generation and in finding alternative jobs that do not use or depend on natural resources only.

8.4 Stakeholders

All relevant stakeholders including the private sector, local communities and park visitors should actively involve themselves in park management and sustainable use of natural resources by helping prevent land encroachment. Everyone should respect and effectively implement the existing laws of the Royal Government of Cambodia.

8.5 Identify Areas for Further Research

Because of fund limitation, this research was not able to study and examine other options for preventing and discontinuing land encroachment in BNP. Further research should be done to analyse and study the range of possible options for BNP conservation, including household survey to explore poverty in local communities surrounding BNP.

9. Conclusion

Bokor National Park is rich in natural resources and flora and fauna; its fens and bogs are an unusual feature. It contains a large number of mammals (29 species), amphibians, reptiles, and over 300 bird species. It has a wide range of forest types, including dry dipterocarp and mixed deciduous, as well as moist evergreen. At least 38 rare plant species and 47 non-flowering plant species are found in BNP.

This research shows that the park plays a significant role in generating benefits for the surrounding areas and contributes to provincial economies. The national park generates significant revenues for government and the private sector profits, sustains rural and urban household livelihoods, and is an important component of provincial economic output and growth.

It provides economic value in four ways: (1) physical products that can be consumed directly, such NTFPs that are used by local communities, logging, tourism, and human habitation (direct value); (2) environmental function and ecological services, including good and clean water supply for Kampot town and other settlements; watershed and protected catchments for rice irrigation, oil palm, and agricultural plantations; watershed and protected catchments for hydropower; biodiversity; and habitats for rare and endangered species (indirect value); (3) option value, for functions and possible use in the future for ecotourism, water development, commercial application of wild species, and gene pools; and (4) existence value, offering significant value for global biodiversity, national heritage, and local cultural and spiritual value for both communities and society at large.

Of the BNP's total land area of 140,000 ha, 3,377 ha have been encroached on for a variety of purposes. Encroachers include two new villages (Andong Khmang Leng and Steung Kbal Damrey) in Ou Back Rotece commune, Koh Kong province. Moreover, 971 ha have been used for investment and other development activities, while 3,157 ha have been determined as a CPA for sustainable use by local communities.

The major reason for land encroachment in BNP is the establishment of agricultural (232 ha) and industrial (377 ha) plantations. Other areas (more than 62 percent of the total encroached area) had been cleared for commercial purposes. This research was unable to identify the specific uses for these areas, thus, they were indicated as "unknown activities" or "no activities."

Five types of agricultural plantations are found, including corn farms, rice fields, and watermelon and vegetable plantations. There are seven types of industrial plantations: bananas, cashews, durians, jackfruit, mangos, oranges, and a mixture of these crops. Rice fields, durians, and mixed plantations are the most common, each covering more than 100 ha.

Although a number of national policies and legislations are in place concerning natural resource conservation and land management, encroachment actively continues in Bokor National Park. The main reasons behind people's engagement in this illegal activity are: (1) poverty, (2) population and migration, (3) high value of land, (4) development pressure, and (5) limited law enforcement.

The research reveals that the living conditions of most local people in Preak Thnout commune are very poor (70%) and poor (30%).

People move from one place to another. The reasons for migration include natural disasters, joblessness, and poverty. Natural disasters, such as droughts and floods, are serious concerns that destroy agricultural and industrial products every year. The end result is that people are left jobless, homeless, and hungry.

The high price of land and development pressure has encouraged people, especially local communities, to be involved in land encroachment in recent years.

Insufficient human resources, limited capacity of the legal officers, misunderstanding of legal documents, lack of involvement of stakeholders in the implementation of the laws, limited cooperation and collaboration among related institutions, and partial corruption are significant factors hindering law enforcement.

The BNP's land encroachment situation has become serious. Its continued occurrence has led to the degradation of natural resources in the park. The dwindling of natural resources negatively impacts on the national park's ecosystem and affects Kampot's economy and local livelihoods.

If the government takes no action or does not come down heavily on those who practise land encroachment in Bokor National Park, the encroachment scale will increase in the next few years. This could destroy the ecosystem as well as seriously impact the rare and endangered species currently present in the park.

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